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**EUROPEAN PATENT APPLICATION**

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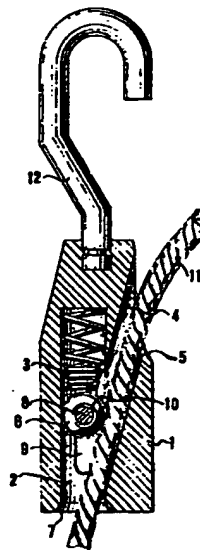
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(56) Self-fastening device for ropes, cords, cables and the like.

(57) A self-fastening device for fastening ropes, cords, cable and the like, particularly for fastening tensile stressed ropes, cords, cables and the like, comprising at least a terminal (12), a body (1) with seats (2 and 4) for a fastening member (6), a spring (3) and a cord (11), wherein the self-fastening member (3) is shaped like a ball and is idly and loosely pivoted on a shank (8) of a reel shaped member (80) which is slidably mounted in a pair of slots (9) and projects outside with a pair of operable flanges (8a and 8b), the ball and shank size being such that in operation rolling friction conditions between self-fastening member (6) and its seat 2 are determined.



**EP 0 013 693 A1**

- 1 -

Self-fastening device for ropes, cords, cables and the like

It is an object of the present invention a self-  
5 fastening device for ropes, cords, cables, and the  
like, particularly for fastening tensile stressed  
ropes, cords, cables and the like.

At the present status of the art a number of self-  
10 fastening devices for ropes, cords, cables and the like  
are known for several uses and which have one or more  
drawbacks. All of them comprise a connector member  
or cord terminal, and a body housing a spring, a fast-  
ening means and a receiving seat for rope, cord, cable  
15 or the like which provides an acute angle with the self  
fastening means shifting seat.

Known devices may be substantially arranged in two  
classes. A first class comprises all those devices  
20 in which the self-fastening member operates inside the  
housing body and has no outer seizable projections to  
drive the same and to disengage and therefore to re-  
lease the rope, cord, cable or the like. In a second  
class may be classified those devices wherein the self

fastening member is cylindrical and is provided with outer projections which are operable to release the rope, cord, cable or the like.

- 5 From the point of view of the effectiveness of the device the former were better due to the fact that the self-fastening member could be formed as a spherical or as a swelled or arcuate in two directions body. The latter were less advantageous than the former as it was thought  
10 that the outer projection of the self-fastening member could be provided only together with a cylindrical shape.

- From a constructive point of view in both classes but  
15 over all in the latter difficulties were found to provide spring self-fastening member units particularly effective and cheap.

- The aim of the present invention is to eliminate the  
20 aforesaid disadvantages and to offer, furthermore various advantages.

- The inventor, has conceived a self-fastening unit substantially formed as a sphere which is idly pivoted on  
25 the shank of a reel shaped member whose flanges project outside to provide releasing members for the self-fastening member. On the other side the spherical shape of the self-fastening member provides a spontaneous matching between the spherical surface of same self-  
30 fastening member and the spring end which according to a preferred embodiment of the present invention is a truncate-conical spring end.

The present invention will hereinafter be further described by way of example with reference to the accompanying drawings in which: -

5 Figure 1 is an axial vertical longitudinal cross-section view of a device according to the present invention in operation.

Figure 2 is an axial horizontal longitudinal cross-section view of device as shown in figure 1.

Referring now to the drawing figures there is shown a self-fastening device for ropes, cords, cables and the like, particularly for fastening tensile stressed ropes, cords, cables and the like comprising conventionally a terminal preferably in the form of an hook 12, a substantially solid body having a seat for receiving self-fastening member 80 and a passage for receiving therethrough a rope, cord, cable or the like and forming an acute angle with the seat 2 for receiving the self-fastening member, a self-fastening member 80 and a spring 3. The self-fastening member 80 is longitudinally movably mounted in a pair of slots 9 and projects out from body 1 with a pair of ring units 8a and 8b. Conventionally, a rope, cord, cable or the like is slipped through from the end mouth opposed to the hook 12 after having urged the self-fastening member 80 in opposition to the force of spring 3.

30 This is obtained by driving on projecting ends 8a and 8b. Releasing the self-fastening member i.e. releasing

spring 3, the self-fastening member 80 engages ropes, cord, cables or the like 11 fastening them to the body 1: the more the rope is drawn the hardest it becomes fastened.

5

According to the present invention the self-fastening member 80 is substantially shaped like a ball 6 and is loosey and idly mounted on shaft 8 of member 80.

Spherical member 6 is sized both relatively to the  
10 bore 2 and shaft 8 diameter so that when the spherical member 6 is radially urged by rope 11 against opposite side of base 2 it is not impeded by shaft 8. In this way a condition of rolling friction between spherical member 6 and base 2 is provided. According to a preferred  
15 embodiment of the invention the throat inlet 7 and outlet 5 are bevelled.

## Patent claims

1. A self-fastening device for fastening ropes, cords,  
cable and the like, particularly for fastening tensile  
5 stressed ropes, cords, cables and the like, comprising  
at least a terminal (12), a body (1) with seats (2 and  
4) for a fastening member (6), a spring (3) and a cord  
(11), wherein the self-fastening member (3) is shaped  
like a ball and is idly and loosely pivoted on a shank  
10 (8) of a reel shaped member (80) which is slidably  
mounted in a pair of slots (9) and projects outside with  
a pair of operable flanges (8a and 8b), the ball and  
shank size being such that in operation rolling friction  
conditions between self-fastening member (6) and its  
15 seat 2 are determined.

2. Self-fastening device, as claimed in claim 1,  
characterized in that the spring (3) at least at the end  
engaging the ball (6) is shaped like a truncate cone  
and its terminal turns adjacent to the ball-like self  
20 fastening member (6) are closed i.e. provide a strenght  
neck.

3. Self-fastening device as claimed in claims 1 and 2,  
characterized in that the body (1) of device is widely  
25 bevelled at the passage inlet (7) and outlet (5) for the  
rope, cord, cable or the like (11).

1/1

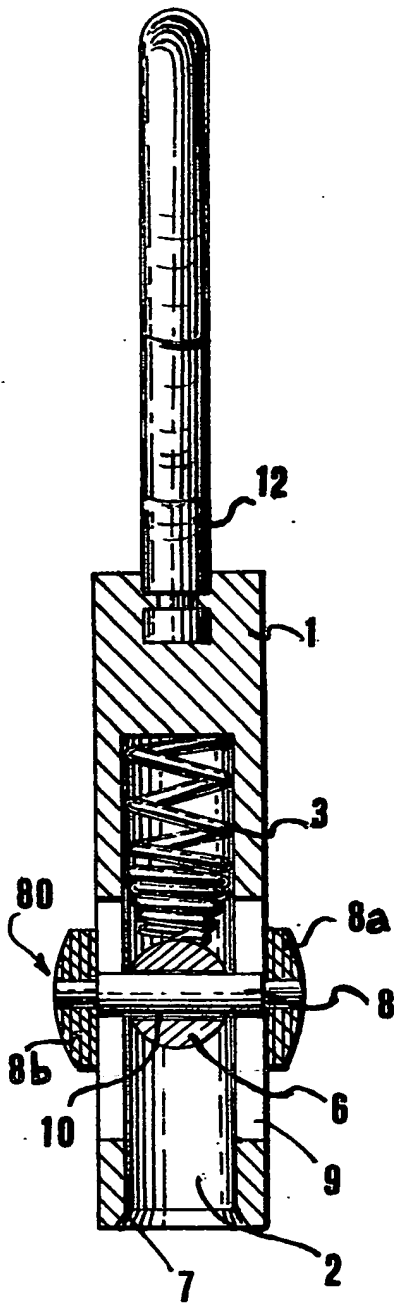


FIG. 2

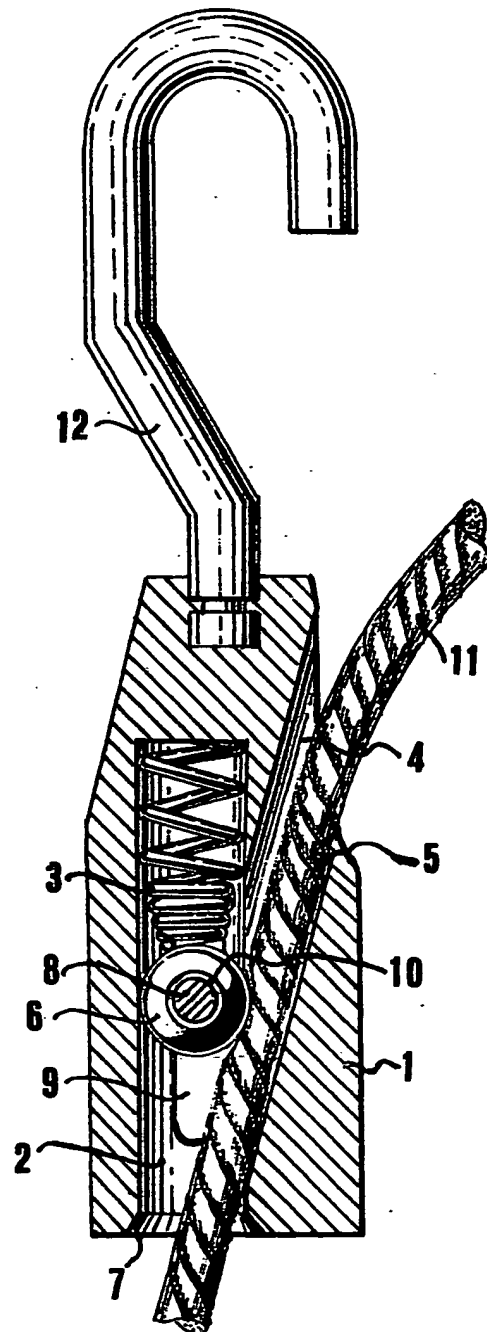


FIG. 1





European Patent  
Office

# EUROPEAN SEARCH REPORT

0013693  
Application number

EP 79 10 4090

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
	<b>CH - A - 469 918 (ANZINI)</b> * Figures 1,2; column 1, line 33 - column 2, line 42 * --	1-3	F 16 G 11/10
	<b>US - A - 3 827 674 (PASBRIG)</b> * Figure 17, column 6, lines 10-15, 56-64; figures 24,25, column 7, lines 16-21, 32-37 * --	1,2	
A	<b>FR - A - 2 076 703 (LAINE)</b> * Figures 8,9; page 7, line 22 - page 8, line 8 * --		TECHNICAL FIELDS SEARCHED (Int.Cl. 3)
A	<b>US - A - 3 551 883 (PASBRIG)</b> * Figures 3,4; column 2, line 59 - column 3, line 25 * ----		F 16 G B 66 C B 66 D H 01 R F 16 B
			CATEGORY OF CITED DOCUMENTS
			X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
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<input checked="" type="checkbox"/> The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
The Hague	10-01-1980	JAIK	